

ABSTRACT

Acoustic imaging systems are provided. A preferred system includes a
5 protective cover configured to mate with a transducer body. The transducer includes a
two-dimensional transducer element matrix array formed by a plurality of individually
controllable transducer elements. The protective cover is superposed above the two-
dimensional matrix array and is transparent to incident acoustic energy. Preferably,
the protective cover is shaped to reduce patient discomfort and repetitive motion
10 injuries to sonographers. Alternative embodiments comprise a shaped two-
dimensional transducer element matrix array. Methods for improved ultrasound
imaging are also provided.